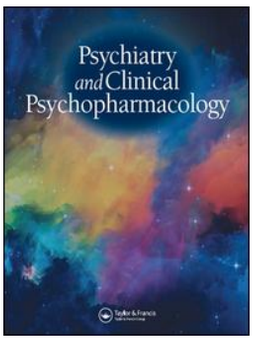

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Esra Yazıcı[a], Tugba Mutu Pek[a], Hilal Uslu Yuvacı[b], Elif Köse[c], Serhan Cevrioglu[b], Ahmet Bulent Yazıcı[a], Ali Savaş Çilli [a], Atila Erol[a] and Nazan Aydın [d]*

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ABSTRACT

BACKGROUND: Anxiety disorders are common in women. This sensitivity extends into the perinatal period as well. Thus, screening for anxiety disorders during the aforementioned period is important for the proper management and treatment of conditions. This study was conducted to assess the validity and reliability of the Perinatal Anxiety Screening Scale, which was determined to be beneficial for the purposes listed above.

METHOD: For this study, the "Perinatal Anxiety Screening Scale" (PASS) was translated into Turkish and relabelled "Perinatal Anksiyete Tarama Ölçeği" (PASS-TR). 312 perinatal women were then evaluated with: the ICD 10 diagnosis system, SCID-1, the Hamilton Anxiety Scale, Hamilton Depression Scale, Beck Anxiety Scale, and PASS-TR. The resulting data was examined using Pearson Correlation analysis, Reliability tests, ROC analysis, and Factor analysis. The generated sub-dimensions were re-examined again by confirmatory factor analysis and Root Mean Square Error of Approximation (RMSEA), Root Mean Square Residual (RMR), Standardized Root Mean Square Residual (SRMR) χ^2/sd, the Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit Index (CFI), Akaike's Information Criterion (AIC), and the Bayesian Information Criterion (BIC).

RESULTS: In this assessment, Cronbach's Alpha value for the scale is = 0.95, and the sub-dimensions obtained by explanatory factor analysis are: (1) general anxiety and specific fear, (2) perfectionism and control, (3) social anxiety and adjustment disorder, (4) acute anxiety and trauma. The cut-off score for the scale is 16. As a result, it was determined that PASS-TR is an accurate method for the scanning of anxiety disorders in the perinatal period.

CONCLUSION: PASS-TR can be validly and reliably used to scan for anxiety disorders amongst perinatal women.

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Anxiety; pregnancy; postpartum; perinatal; Turkey; depression

Introduction

Anxiety disorders are more common in women than in men, and this comparative sensitivity extends into the perinatal period [1]. According to a recent study involving 221,974 women from 34 countries, anxiety symptoms in the perinatal period are observed to be 18.2% in the first trimester, 19.1% in the second trimester, and 24.6% in the third trimester. The rate of incidence for anxiety disorder diagnoses during pregnancy is 15.2%. In the postnatal period, anxiety symptoms are 15.0%, and anxiety disorder diagnoses are 9.9% [2]. While only a limited number of such studies have been undertaken in our country, in an Ankara study carried out with pregnant women in their 1st trimester, 13.5% of them were ascertained to have an anxiety disorder, while 21.6% were ascertained to have an anxiety disorder along with depression [3].

Screening for and recognizing the signs of anxiety disorders during the perinatal period is very important. If not identified and treated, they may have adverse effects on both mother and baby. These include: compliance with medication, the deterioration of maternal functions, deterioration of medical illnesses, the deterioration of interpersonal relations and economic losses, smoking and substance abuse, developmental problems for the baby and general infant health concerns [3,4]. Despite these negative effects, mental illnesses are not often recognized in the perinatal period; even when identified, they seldom receive adequate treatment [5,6]. Screening studies in our country and around the world suggest that these mental illnesses affect women during and after the perinatal period [7,8]. Awareness of depression during this period is increasing, and it is encouraging that screening studies are becoming more widespread. However, although anxiety disorders are as common as depressive disorders, screening rates remain inadequate and many women remain untreated [9].

It is critical to recognize the psychological and physiological symptoms related to pregnancy that can

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manifest during the perinatal period. This task requires specific assessment, rather than relying on generic anxiety scales. The perinatal period witnesses diagnoses across the spectrum, not merely general anxiety, and it is important that each one is diagnosed and treated appropriately. This requires the existence of a scale that is specifically adapted to the perinatal period. Somerville et al. developed the Perinatal Anxiety Screening Scale (PASS) for this very purpose [10]. They recently showed that this scale can be useful for determining the severity of anxiety disorders in perinatal samples [10].

There is no single comprehensive scale in our country that specializes in detecting perinatal anxiety disorders. The prevalence of said disorders, as demonstrated by both local and global studies, highlights their importance in terms of maternal and fetal health [11,12], as well as the limitations of current evaluation methods, proving the need for a perinatal-specific scale, and thus the aim of this study.

Our plan was to demonstrate the effectiveness of a Turkish version of PASS in evaluating perinatal samples. It is our hope that the scale will be translated into Turkish and then introduced in the Turkish scientific literature, allowing for easier and more effective studies of perinatal disorders in Turkey.

Method

Research design

This was planned as a collaborative study of Sakarya University Hospital Psychiatry and Obstetrics and Gynaecology Clinics. After contacting Susanne Somerville, one of the authors who developed the original PASS, we received project approval from the ethics committee of Sakarya University Faculty of Medicine. The original scale was obtained from Susanne Somerville via email and then translated. With scale in hand, samples were prepared and processed, and after statistical analysis we compiled our findings.

Language equivalence studies of the scale

After the study team translated the scale into Turkish, a board consisting of specialist doctors, assistants, academicians and intern doctors examined it, article by article, over the course of three sessions. We then included the most applicable expressions indicated by their assessment. The revised scale was submitted to trainee doctors and psychologists for testing purposes, and after reviewing their appraisal of its understandability and applicability, we submitted it a final time to be reviewed by both the translation board and the others. The final version was then retranslated back into English by an independent translator, where it was revised and approved by Susanne Somerville . After a final consensus was formed with the authors, the Turkish version of PASS was christened "Perinatal Anksiyete Tarama Ölçeği" and implemented in its final form.

Sampling

This study included women in pregnancy and postpartum periods who applied to Sakarya Training and Research Hospital Obstetrics and Gynaecology Polyclinic and Mother Monitoring Center between October 2016 and June 2017. In this context, 650 women who had proper general health status and demonstrated the ability to understand the study and answer the questions (demonstrating eligibility), were asked to participate after their gynaecological examination; 331 of them accepted. Women with serious illnesses, including mental illness or retardation, and women with organic brain disease were not invited to participate, for fear they could negatively affect the results. As a result, 331 pregnant women were interviewed and scaled, Due to deficiencies in 19 of the surveys, 312 women were ultimately included in the analysis. In keeping with ethical procedures, verbal and written consent was secured from all participants.

Data collection tools

Those who volunteered in the study filled out a sociodemographic data form at first, prior to conducting a SCID-1 interview with an experienced psychiatrist (T.M) in accordance with DSM-IV. The psychiatrist assessed the subjects according to the ICD-10 diagnostic system as well. Each participant filled out the PASS Turkish form after their interview. The Hamilton Depression Scale, Hamilton Anxiety Scale, and Beck Anxiety Scale were applied during the course of each interview.

Sociodemographic data form

The data collection form used in the research was prepared using accepted literature. The questionnaire consisted of 19 questions in total: 7 of them about sociodemographic characteristics, 5 about history (chronic diseases) and habits, and 7 questions about pregnancy (pregnancies).

Perinatal Anxiety Screening Scale

The PASS scale, consisting of 31 items originally developed by Somerville et al. in 2013 with 393 pregnant women, was included after being translated into Turkish. A study assessing the base scale's validity and reliability was published in 2014. The four sub-dimension of the scale are: (1) acute anxiety and adjustment disorder, (2) general anxiety and specific fears, (3) perfectionism, control and trauma, and (4) social anxiety. In the validity reliability study, the Cronbach Alpha coefficients for the sub-dimensions are 0.90, 0.89,

0.86, and 0.87 respectively. The answers for the questions/items in the scale are "never" "sometimes," "often," and "almost always"; the scores are 0,1,2,3. In the research that first gave rise to the scale, the cut-off value was indicated to be 26 [10].

Hamilton Depression Rating Scale (HAM-D)

This scale was developed to rate the level of depression in patients with relevant diagnoses [13]. We used a 17-item version in this study. Reliability and validation studies of the Turkish version were conducted by Akdemir et al. [14]. Scores between "0–7" indicate no depression; "8–15" qualifies as mild depression, "16–28" as moderate, while a score of "29" or more indicates severe depression.

Hamilton Anxiety Rating Scale (HAM-A)

Hamilton [15] developed a scale containing 14 questions to score associated mental and physical symptoms. It predicts anxiety levels and symptom distribution while measuring their severity. Turkish validity and reliability studies were conducted by Yazici et al. [16]. Scores obtained from the scale are classified as: "0–5" for no anxiety and "6–14" for minor anxiety, while "15" points and above indicate major anxiety.

Beck Anxiety Inventory (BAI)

The BAI is a 21-item inventory designed to assess levels of anxiety [17]. It measures physical, emotional, and cognitive aspects of anxiety and fear of losing control. The score for each item ranges from 0 to 3.The maximum score on the scale is 63, with 0–7 equalling the minimal level of anxiety; 8–15 indicates mild anxiety, 16–25 is moderate anxiety; and 26–63 corresponds to severe anxiety. Beck's original version had internal consistency with a Cronbach Alpha of 0.92, and a retest reliability co-efficiency of $r = 0.75$. Ulusoy et al. conducted a validity and reliability study of the Turkish version of the BAI, finding that it was applicable to the Turkish population [18].

Statistical methods

Data suitability for the factor analysis was assessed using Barlett's test, and sample size was assessed using the Kaiser-Meyer-Olkin (KMO) value. The Perinatal Anxiety Symptom Scale (PASS), consisting of 31 items/questions, was assessed by explanatory factor analysis using the principal components method in terms of construct validity, and rotated with Direct Oblimin. In the explanatory factor analysis, it was assessed as four factors in accordance with its original [19]. The resultant structure was subjected to logical assessment, and it was arranged by taking into account the items with factor loadings of 0.25 and above. Likewise, those items having a factor structure resulting from explanatory factor analysis were re-examined by confirmatory factor analysis, and the Root Mean Square Error of Approximation (RMSEA), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit Index (CFI), the root mean square residual (RMR), Akaike's Information Criterion (AIC), the Bayesian Information Criterion (BIC) fit indices were calculated [20].

Sub-dimensions based on factor analysis were examined by reliability analysis in terms of internal consistency; Cronbach Alpha coefficients and item-total correlations (Pearson moment product correlation) were also calculated. If the alpha coefficient is 0.80–1.00, the developed test is considered to have high reliability; if it is 0.60–0.79, the developed test is moderately reliable, while if it is 0.40–0.59 the test is considered to have low reliability. A range between 0.00–0.39 is considered unreliable [21].

Since each sub-dimension indicated additivity according to the Tukey additivity test, scores with sub-dimensions were summed up and thus the sub-dimension scores were obtained. In the descriptive statistics of the sub-dimensions, the median and interval between quartiles were compared with the Mann Whitney U test, depending on the age and number of pregnancies.

The diagnostic decision-making feature of the PASS scale was examined based on SCID and ICD diagnoses. Selectivity, sensitivity, positive and negative predictive values within the significant limit range were calculated by finding the area under the curve [22].

Significance level was accepted as $p < 0.05$. We used statistical programmes to analyse the data. (Statistical Package for the Social Sciences 17.00 and 22.00 by IBM Corp.; Armonk, NY, USA)

Results

When the data of the 312 participants was completely examined, we found that the mean age (years) was 30.28 ± 5.52 (min–max, 18–47). 30.8% of the participants were in their first pregnancy, while 40.4% of them were in their second (min–max, 1–10). The mean gestational week was 22.86 ± 9.76 (min–max, 1–40). All pregnant women participating in the survey were married, and 30.8% of them were working. 10.6% of them graduated from primary school, 27.9% from secondary school, 37.5% from high school, and 13.5% of them were higher education graduates. 10.6% were university graduates.

29.5% of the participants indicated that they had an anxiety, depression or similar diagnosis in the past, and 17.9% of them stated that they still have an active psychiatric disease. 25.6% of the participants were treated for a psychiatric disease until the time they joined the study. 13.5% stated that they had a chronic disease.

Table 1. Distribution of participants' DSM-IV diagnoses.

SCID Diagnosis	*n*	%
No Psychiatric Diagnosis	157	47.9
Generalized anxiety disorder	63	19.2
Obsessive compulsive disorder	24	7.3
Complex anxiety and depression	22	6.7
Adjustment disorder	19	5.8
Major Depression	9	2.7
Panic Disorder	8	2.4
Anxiety disorder not classified under any other title	8	2.4
Social Phobia	7	2.1
Specific Phobia	7	2.1
Personality Disorder	3	0.9
Somatoform disorder	1	0.3
Total[a]	328	100.0

[a]Some people had two diagnoses.

There was no psychiatric disorder listed among those chronic issues. Distributions of psychiatric diagnoses are shown in Table 1.

Internal consistency

Cronbach Alpha was found to be 0.95 in the analysis carried out to assess the overall internal consistency of the scale. In the item/question analysis of PASS-TR, we observed that in the case of a removal of any item, the Cronbach Alpha value remained within the range of 0.955–0.958. For this reason, we decided not to remove these items.

Construct validity

The sampling was randomly divided in two, and the construct validity of the scale was assessed using factor structure validity techniques. Before the analysis, the Kaiser-Meyer-Olkin (KMO) value and Barlett's test results were checked; KMO was found to be 0.90, and Barlett's test was found to be at $p < 0.001$ significance level ($\chi^2 = 3496.174$).

In order to confirm the structure of the questionnaire translated into Turkish, and to demonstrate its similarity to the original, 31 items were analyzed through Explanatory Factor Analysis using Principal Component Method. They were considered with regard to four factors, in accordance with the original. **The total variance indicated** by the four factors **is 61.58% ($n = 156$).** Accordingly, Factor 1 (general anxiety and specific fears) accounts for 44.65% of the total variance, Factor 2 (Social anxiety and general anxiety and adjustment disorder) 6.82%, Factor 3 (Perfectionism and control) 6.42%, and Factor 4 (acute anxiety, dissociation and trauma) 4.33% (Table 2).

Table 2. Factor structures and factor loadings.

	Factors			
	1	2	3	4
Factor 1: General anxiety and specific fears				
3. A sense of dread that something bad is going to happen	**.848**	.042	.026	.006
4. Worry about many things.	**.787**	.006	−.013	−.143
10. difficulty in sleeping even when I have the chance to sleep	**779**	−.042	−.040	.105
5. Worry about the future	**.751**	−.212	−.168	−.029
1. Worry about the baby/pregnancy	**.745**	−.019	.049	.055
15. Feeling jumpy or startling easily	**.700**	.114	−.239	.070
6. Feeling overwhelmed	**.680**	−.061	−.121	−.142
2. The fear that harm will come to the baby	**.660**	.218	.080	−.044
8. Sudden rushes of extreme fear or discomfort	**.622**	.039	−.093	−.221
9. Repetitive thoughts that are difficult to control or stop	**.563**	.087	−.093	−.247
7. Highly intense fears about things like needles, blood, birth, pain etc.	**.336**	.315	−.004	−.018
Factor 2: Perfectionism and control				
12. Wanting things to be perfect	−.075	**.786**	−.156	.099
13. Needing to be control of things	.017	**.767**	.076	−.206
14. Difficulty in stopping checking things or doing things over and over again	.067	**.703**	−.032	−.270
11 Having to do things in a certain way or order	.059	**.683**	−.273	.197
Factor 3: Social anxiety, general anxiety and adjustment difficulties				
19. Concern that I will embarrass myself in front of others	−.132	.149	**−.740**	−.009
20. .The fear that others will judge me negatively	.060	−.021	**−.738**	−.102
22. Avoiding social activities with the fear of being uncomfortable	.214	−.010	**−.730**	−.017
21. Feeling really uneasy in crowds	.149	.218	**−.632**	−.050
26. Difficulty in adjusting to recent changes	.128	.004	**−.579**	−.184
23. Avoiding things that concern me	.153	.075	**−.535**	−.205
27 Anxiety getting in the way of being able to do things	.360	−.160	**−.479**	−.251
Factor 4: Acute anxiety, dissociation and trauma				
25. Losing track of time and can't remember what happened	−.026	−.144	−.065	−.763
24. Feeling disconnected like you're watching a movie	−.108	.087	−.089	−.695
28. Competing ideas that make it difficult to concentrate	.100	−.026	−.221	−.642
29. Fear of losing control	.076	−.067	−.244	−.627
31. Feeling anxious (agitated), fidgeting	.240	.005	.032	−.593
30. Feeling panic	.019	.199	−.233	−.547
16. Concerns about repetitive thoughts	.288	.191	−.045	−.497
18. Upset about recurring memories, dreams or nightmares	.157	.381	.214	−.491
17. Being on guard or needing to watch out for things	.330	.324	−.025	−.351
Disclosed Variance (%) (Total %61.579)	43.79	7.25	5.68	4.84
Cronbach's alfa (general 0.955) ($n = 156$)	0.926	0.823	0.897	0.889

Note: The item no belongs to the original scale, changes in item order is are according to Factor analysis results of Turkish Form.

Additivity and confirmatory factor analysis

The Tukey additivity test assessed whether the scale was prepared on an additive scale type ($p < 0.001$). The difference between the score averages of the PASS-TR items, and the averages of the scores obtained from the subdimensions of the scale, was tested using the Hotelling T2 statistic and found to be highly significant ($p < 0.001$). The main study was conducted with a sampling of 312 subjects randomly divided into two groups of 156. Five modifications were made among the items in the confirmatory factor analysis of the scale. As a result of the analysis, the fit indices were found as follows: $\chi^2 = 1022.46$; $df = 428 (p < 0.001)$; RMSEA = 0.095; RMR = 0.047; GFI = 0.708; AGFI = 0.708; CFI = 0.841; AIC = 1158.46; BIC = 1365.

After establishing co-variance analysis for correlated item term errors between the first and the second items in the factor of general anxiety and specific fears; between the 19th and 20th items and 26th and 27 the items in social anxiety and adjustment disorder factor; between 16th and 17th items, 24th and 25th items, 30th and 31th items in the acute anxiety, trauma and dissociation the fit indices were found as: $\chi^2 = 846.69$; $df = 422$; RMSEA = 0.081; RMR = 0.048; GFI = 0.755; CFI = 0.886, AIC = 994.69, BIC = 1033.19.

ROC analysis: scanning reliability

ROC analysis of the scale was conducted in consequence of the explanatory and confirmatory factor analyses. In accordance with the SCID interviews, subjects with anxiety disorders were classified as diagnosed patients, while those with major depression and personality disorders were not. According to the SCID-1 interview, the cut-off value of PASS was 16, and the area under the curve (AUC) = 0.93 (standard error = 0.016), sensitivity = 0.94, selectivity = 0.82 (95% GA: 0.898–0.959). Pozitif Predictive Value (PPV) = 0.84, Negative Predictive Value (NPV) = 0.93 according to results of DSM-IV diagnostic assessment (Figure 1). When subjects with anxiety disorders were accepted as diagnosed patients according to ICD-10, the cut-off value of PASS was again 16, and the area under the curve (AUC) = 0.94 (standard error = 0.014), sensitivity = 0.95, selectivity = 0.84 (95% GA: 0.917–0.971) According to ICD-10 diagnostic assessment PPV = 0.85 and NPV = 0.94 for the scale (Figure 2).

Correlation with other scales

The correlation of PASS with Beck anxiety, Hamilton anxiety, and Hamilton depression scales was $r = 0.82$; $r = 0.77$; $r = 0.59$ ($p < 0.001$, $p < 0.001$, $p < 0.001$, respectively). PASS had a very strong positive relation with the Beck and Hamilton anxiety scales, and a strong positive relation with the Hamilton depression scale. The subjects' Beck anxiety, Hamilton anxiety and Hamilton depression scores, and the mean and standard deviations were respectively 11.5 ± 10.71; 7.5 ± 7.18; 3.6 ± 4.98 (Table 3).

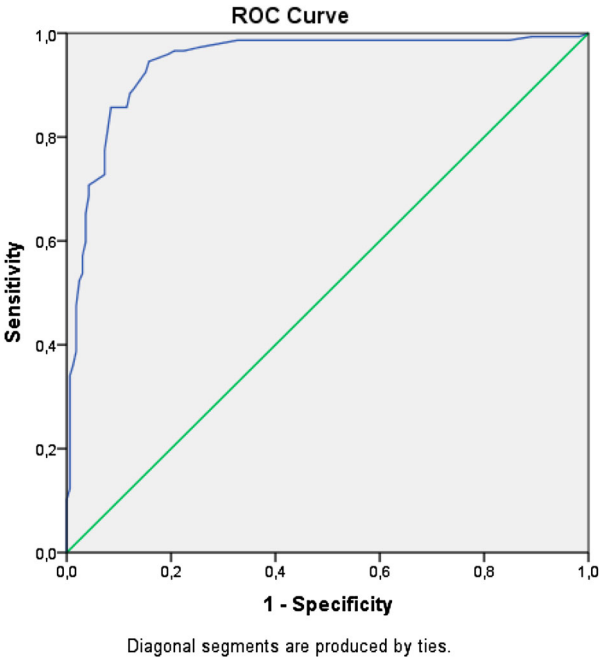

Figure 1. ROC analysis for ICD-10.

ROC curve, and selectivity and sensitivity of other scales and PASS

The sensitivity and specificity of PASS-TR were evaluated separately with the Hamilton and Beck anxiety scales, and the Hamilton Depression scale. The results are presented in Table 4.

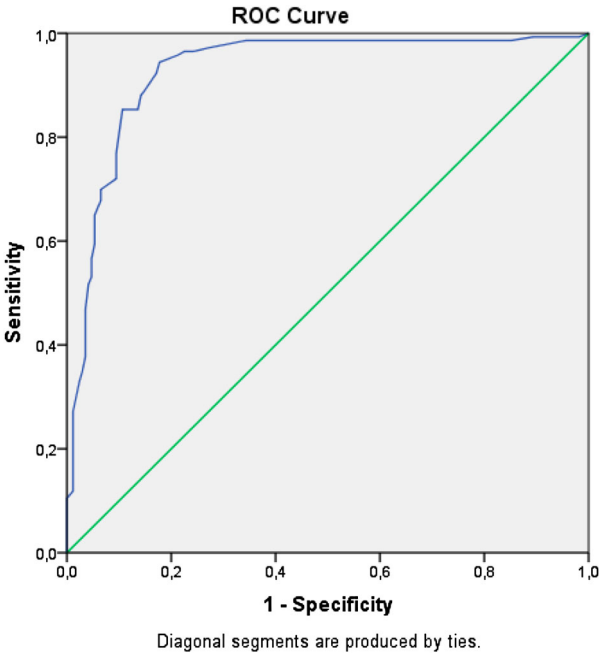

Figure 2. ROC analysis for SCID-1 diagnosis.

Table 3. Distribution of the scale scores used and their correlations with PASS.

Scale ($N = 312$)	Median	Average	SD	Min	Max	r*
PASS	17	21.1	16.00	–	61	–
Beck Anxiety Scale	7	11.5	10.71	–	44	0.82
Hamilton Anxiety Scale	4	7.5	7.18	–	36	0.77
Hamilton Depression Scale	2	3.6	4.98	–	21	0.59

SD = Standard Deviation *<0.001.

Table 4. Some features of the scales used in the research.

Scale	EAA	SD	Sensitivity	Selectivity
PASS[a]	0.94	0.014	0.95	0.84
Hamilton Anxiety	0.93	0.015	0.88	0.89
Beck Anxiety	0.89	0.019	0.79	0.89
Hamilton Depression	0.84	0.023	0.55	0.68

Note: EAA: The area under the curve, SD: Standard Deviation.
[a]Diagnoses and matters have been taken into account according to ICD-10.

Practice duration

The scale filling out duration of women was not measured individually but was estimated to be approximately 5–6 minutes in general.

Discussion

This study shows that the Turkish translation of the Perinatal Anxiety Screening Scale is valid and reliable for use in this country.

Participants were distributed in such a way as to reflect different segments of society in terms of age, education level and working status. In addition, more than half the women interviewed using SCID-I and ICD-10 had at least one psychiatric diagnosis. However, only 25.6% of them stated that they had received psychiatric treatment prior to the study. This is significant because it demonstrates that women are not being diagnosed and treated properly in the perinatal period, once again illustrating the necessity of the perinatal screening tests.

The Cronbach Alpha value was assessed as having high reliability (0.95) in the analysis carried out to evaluate the internal consistency of PASS TR [23,24]. In the original version of the PASS-TR, Cronbach's alpha value was found to be 0.96, indicating high reliability.

We carried out Kaiser-Meyer-Olkin and Barlett's analysis to evaluate the structural validity of the scale. KMO = 0.868 adequacy coefficient and $p = 0.00$ results were obtained, leading to our conclusion that the sample was adequate and the data suitable for further analysis [20,25]. The factor analysis of PASS-TR was examined based on four conditions, in accordance with the original version, and it was found that the scale explained 62.25% of the sample. It can be said that this ratio is a sufficient factor structure [26]. It was determined that the question distribution for the factors slightly differed from the original version. In original scale factor 1 (acute anxiety and adjustment) had items that addressed symptoms of panic disorder, dissociative disorder and adjustment difficulties; factor 2 (general worry and specific fears) included items covering symptoms ofgeneral anxiety disorder and phobia; factor 3 (perfectionism, control and trauma) had items covering symptoms of obsessive compulsive disorder and posttraumatic stress disorder; and factor 4 (social anxiety) had items that addressed social anxiety. In PASS-TR and order and names of factors have been changed and extended for factor 1as "General Anxiety and Specific Fears"; for factor 2 as "Perfectionism and Control"; for factor 3 as "Social anxiety, General Anxiety and Adjustment Difficulties"; for factor 4 as "Acute Anxiety, Dissociation and Trauma" in accordance with their contents . These changes are a necessary part of intercultural adaptations, and the scale reflects our culture-specific results. The factor analysis provided to see subheadings in which the anxiety scores of the women increases but it is important to remember that anxiety symptoms are not mutually exclusive; there are often multiple common symptoms to be found beneath different subheadings. After establishing the covariance between the error terms of the items, an analysis of the compliance indices determined that they were within accepted limits; the compliance analysis indices obtained were evaluated in this study and found to be within accepted limits as well [20,27].

An additivity analysis was also conducted to determine whether the PASS-TR scores were significant when summed up, which they were. Similarly positive results came from the confirmatory factor analysis.

The threshold value was calculated according to the anxiety disorders in DSM-IV and ICD-10, in order to evaluate the diagnostic value of the test. 16 was determined to be appropriate for both of them. PASS-TR has high sensitivity and specificity for a self-report scale, bearing in mind that the generally accepted practice is that final diagnosis should be conducted via clinical interview.

The cut-off point for PASS-TR is different from the cut-off point determined in the original version, but according to our results, the Turkish form is both more sensitive and more specific (0.9 and 0.8 versus 0.7 and 0.3) [10]. In the original scale, the cut-off point was calculated as 26, minimal anxiety symptoms as 0–20, mild-moderate 21–41 and severe anxiety as 42–93 [28]. In our study, symptom severity is measured and was correlated with Beck Anxiety Scale, Hamilton Anxiety Scale but no assessment was carried to classify symptom severity in grades; instead, we classified women with anxiety disorders and those without. When the threshold value is assessed, the cut-off value of the scale measured with PASS-TR has a lower score, meaning that even with lower symptom scores, the risk of having an anxiety disorder increases. The point at which women begin to recognize and

score their anxiety symptoms seems very close to getting a diagnosis of the disease. At this point, a cultural phenomenon should be mentioned. It can be said that women in Turkey are not very comfortable with recognizing and expressing their anxieties. In a previous study by Bonnet et al., a positive correlation was found between alexithymia and sensitivity in anxiety, which supports this idea [29]. In another study, a relation was found between alexithymic features and an increase in anxiety symptoms [30]. This study has not assessed women's ways of expressing their feelings. However, these two different cut-off values regarding anxiety disorders suggests that there may indeed be cultural differences in the expression of emotions and symptom severity.

PASS-TR scores were correlated with Beck depression, Beck anxiety and Hamilton anxiety scores. It is not surprising that it correlates with depression scores, since the co-existence of anxiety and depressive disorders can exceed 60% [31,32]. In the original version of PASS, this ratio was in the range of 0.77–0.83 [10]. In our study, the correlation with depression scale scores was at a roughly similar level of 0.59. This result has a high correspondence with other anxiety scales. The scale can be utilized for symptom severity as well. Based on our results, PASS-TR appears to be more sensitive to perinatal symptoms than other scales, while preserving a level of specificity comparable to other options.

The duration of the test was observed to be 5–6 minutes on average, though not individually measured for each subject. This period is not very long for a screening test, but may be considered to create shorter versions of the scale. Somerville made the same proposal during the original scale study [10].

The lack of test-retesting is a limitation in this study. However, test-retesting was carried out for the original version of the scale, and found to be reliable with a correlation of 0.74. The other limiting factor deals with the classification of women with anxiety disorders, and those without. Some disorders may range outside the cut-off value and thus stay in the non-affected area. With this in mind, additional screenings for depression and similar disorders should be conducted concurrently with anxiety testing to avoid any oversights. The strength of this study is that it presents to the literature the first Turkish scale specific for the perinatal period. It is hoped that PASS-TR, which is a highly valid and reliable scale with its internal consistency, factor structure, sensitivity and selectivity, will be used as a model in Turkish studies and make useful contributions to the related literature.

Conclusion

PASS-TR is a valid and reliable scale and can be safely used with the cut-off point of 16 for scanning anxiety disorders in the perinatal period.

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Disclosure statement

No potential conflict of interest was reported by the authors.

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Annex 1. Perinatal Anxiety Symptom Scale Form in Turkish Language (Perinatal Anksiyete Tarama Ölçeği)

☐ ANTENATAL ☐ POSTNATAL TARİH:
İsim: Gebelik Haftası Bebek Yaşı

Aşağıdakileri **geçtiğimiz ay ne sıklıkla** yaşadınız? Lütfen **her** soru için yaşadıklarınıza **en yakın** olan yanıtı işaretleyiniz.

	Hiçbir zaman	Bazen	Sıklıkla	Her zaman
1. Bebek / gebelik ile ilgili endişe	0	1	2	3
2. Bebeğe zarar geleceği ile ilgili korku	0	1	2	3
3. Bir şeylerin kötü gideceğine dair korku hissi	0	1	2	3
4. Pek çok şey hakkında endişelenme	0	1	2	3
5. Gelecek hakkında endişe	0	1	2	3
6. Birşeylerin üstüne fazla yüklendiğini hissesetme	0	1	2	3
7. İğne, kan, doğum, ağrı vb. şeyler konusunda çok şiddetli korkular	0	1	2	3
8. Birden bastıran aşırı korku veya huzursuzluk	0	1	2	3
9. Durdurulması veya kontrol edilmesi zor olan, tekrarlayan düşünceler	0	1	2	3
10. Uyumak için fırsatım olsa bile uyumakta zorlanma	0	1	2	3
11. İşleri belirli bir düzen veya sıra ile yapmak zorunda hissetme	0	1	2	3
12. Herşeyin mükemmel olmasını isteme	0	1	2	3
13. Herşeyi kontrol etme ihtiyacı	0	1	2	3
14. Birşeyleri defalarca kontrol etmeyi veya yapmayı durdurmakta zorluk	0	1	2	3
15. Diken üstünde hissetme veya kolayca irkilme	0	1	2	3
16. Tekrarlayan düşüncelerin yol açtığı rahatsızlık /sıkıntı	0	1	2	3
17. Birşeyler için tetikte olma ya da dikkatli olma ihtiyacı	0	1	2	3
18. Tekrarlayan anılar, rüyalar ya da kabuslardan dolayı üzülme, sıkıntı çekme	0	1	2	3
	Devamı Arkayüzünde			
	Hiçbir zaman	Bazen	Sıklıkla	Her zaman
19. Başkalarının önünde kendimi rezil edeceğim endişesi	0	1	2	3
20. Diğer insanların beni olumsuz yargılayacağı korkusu	0	1	2	3
21. Kalabalık içinde fazla rahatsız hissetme	0	1	2	3
22. Huzursuz olacağım korkusu ile sosyal aktivitelerden kaçınma	0	1	2	3
23. Huzursuz eden şeylerden kaçınma	0	1	2	3
24. Kendinizi sanki bir filmde izliyormuş gibi kopuk hissetme	0	1	2	3
25. Zamanın nasıl geçtiğini farkedememe ve ne olduğunu hatırlayamama	0	1	2	3
26. Yakın zamanda olan değişikliklere uyum sağlamakta zorluk	0	1	2	3
27. Birşeyler yapabilmenize engel olan kaygı	0	1	2	3
28. Konsantre olmayı güçleştiren yarışan düşünceler	0	1	2	3
29. Kontrolünü kaybetme korkusu	0	1	2	3
30. Paniklemiş hissetme	0	1	2	3
31. Tedirgin (ajite) hissetme, kıpırdanma	0	1	2	3
Toplam Puan				

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